

# *AUTONOMOUSLY ASSEMBLED SPACE TELESCOPE*

## **Abstract**

A method for autonomously assembling a segmented filled aperture telescope ("AAST") in space using modular components that are launched into orbit using multiple launches. In one embodiment, a plurality of interlocking modular mirror backing structure segments, with or without an edge truss, are introduced to a satellite. To this are coupled a plurality of modular segmented optics to form a primary concave mirror. In another embodiment, the mirror backing structure and modular optics segments are formed as a single modular unit, with a plurality of these units coupled together to form the primary concave mirror. The modular concept allows primary mirrors of virtually limitless size to be formed in space with or without using astronauts.